IDAHO GROUND WATER APPROPRIATORS, INC.

INITIAL COMMENTS TO

EASTERN SNAKE PLAIN AQUIFER WORKING GROUP ON WATER SUPPLY AND MANAGEMENT ISSUES

April 22, 2004

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I. EXECUTIVE SUMMARY

These Initial Comments are submitted by Idaho Ground Water Appropriators, Inc. ("IGWA") on behalf of its members. IGWA has represented many of Idaho's ground water users since it first formed in 1994 to provide a common point of view in negotiations surrounding development of the Idaho Department of Water Resources' ("Department") Conjunctive Management Rules. IGWA also has provided financial, technical and legal assistance to its ground water district members in formulating a Preliminary Mitigation Plan for the Thousand Springs Reach ("TSR") of the Snake River. That Mitigation Plan, which was filed with the Department in October of 2003, provides an adaptive framework for the Magic Valley and North Snake Ground Water Districts to conjunctively manage the use of ground and surface water supplies.

IGWA and its members have been engaged in an ongoing dialogue with surface and spring water users in both the American Falls Reach ("AFR") and the TSR to advance conjunctive management in these areas. In the past two and half years IGWA's members have acquired and provided approximately 126,000 acre-feet of replacement water to the AFR and TSR, converted 4,300 acres of previously ground water-irrigated acres to surface water supplies, and constructed water management and delivery structures that provide up to 10,000 acre-feet of replacement water per year to approximately 1,600 irrigated acres in the Hagerman Valley. These efforts are continuing.

These Initial Comments are intended to serve three purposes: First, with respect to the Eastern Snake Plain Aquifer ("ESPA"), they address a common misconception that declines in spring discharges from the ESPA to the Snake River simply reflect a mismanaged and over-appropriated aquifer. Second, these Initial Comments summarize long-standing state policies of maximum beneficial use and full economic development by which ground water development and use has occurred in Idaho. Indeed, the history of ground water development on the ESPA over the past fifty years and the hydrologic effects of the State's settlement of the Swan Falls dispute with Idaho Power Company in 1985 are consistent with these policies. Finally, these Initial Comments provide suggestions to the Interim Committee for setting management goals as it begins its important work.

II. INTRODUCTION

Idaho Ground Water Appropriators, Inc. ("IGWA") is a statewide association of ground water users comprised of six ground water districts, one irrigation district, and numerous municipal, commercial and industrial ground water users. IGWA's members themselves represent thousands of ground water users who irrigate in the aggregate over 855,000 acres of agricultural land in southern Idaho and comprise a majority of southern Idaho's dairies and milk processors. IGWA's members also include several municipal water suppliers across Idaho, all of whom are dependent on ground water for some or all of their water supply. Individual IGWA members such as Anheuser-Busch and Jerome Cheese are important in-state buyers and processors for Idaho's barley and dairy products.

IGWA was formed in 1994 in large part to provide a common voice for Idaho ground water users in the development of the Idaho Department of Water Resources' ("IDWR") conjunctive management rules. Since 1994, IGWA has represented and/or provided technical and legal assistance to its members in other IDWR negotiated rulemakings, in the Snake River Basin Adjudication ("SRBA") and in several landmark cases before the Idaho Supreme Court. IGWA has provided ongoing representation and assistance to its ground water district members, dairies, cities, and other ground water users in reaching interim agreements with surface and spring water users in the American Falls and the Thousand Springs reaches of the Snake River for the years 2001-2003. IGWA also provided guidance and assistance to the North Snake and Magic Valley Ground Water Districts in their development of a proposed five-year Preliminary Mitigation Plan for the Thousand Springs Reach ("TSR") of the Snake River.[1] In short, IGWA has been fully engaged in developing, shaping, and implementing Idaho law and policy concerning conjunctive management of ground and surface water for the past ten years—ten years that have unfortunately seen their share of drought, litigation and uncertainty for all southern Idaho water users.

IGWA believes a turning point now has arrived. This past winter, the active involvement of the Governor's Office, the Legislature, IDWR, and the water users dependent upon the Eastern Snake Plain Aquifer ("ESPA") produced the March 15, 2004 Eastern Snake Plain Aquifer Mitigation Recovery and Restoration Agreement for 2004 ("March 15 Agreement"). The March 15 Agreement signifies the State's recognition that complex resource management, particularly that involving a resource as vast as the ESPA, requires active leadership at the highest level of state government. IGWA believes that all parties recognize that the future of southern Idaho's economy and of each of its citizens[2] is affected by the present physical and legal uncertainties surrounding ground and surface water management.

IGWA offers the following initial comments intending that they will help the Natural Resources Interim Committee on Water Supply and Management ("Interim Committee") to carry out an efficient and effective investigation of these issues.

III. THE WATER RESOURCE

A. The ESPA is not over-appropriated.

In comparison to many other aquifers in the world, the ESPA is vast, prolific and extremely responsive. The ESPA is estimated to hold between 200 and 300 million acre-feet ("MAF") within its upper 500 feet.[3] This is 30 to 50 times the total storage capacity of surface water reservoirs in the upper Snake River basin. According to some estimates, the aquifer may hold as much as much a billion acre-feet of water in all.[4]

A 1996 USGS report estimated that in 1980 the discharge from the ESPA was approximately 8.2 MAF via spring discharges and ground water pumping.[5] Of this amount, approximately 1.1 MAF (or less than 14%) was attributable to ground water pumping for irrigation and all other uses. The remaining 86% of ESPA annual discharges, or approximately 7 MAF, occurs through springs to the Snake River. The annual recharge the ESPA in 1980 was estimated at approximately 8.1 MAF, more than half of which was attributable to surface water irrigation on the Plain. Thus, the water discharged or withdrawn from the ESPA due to ground water pumping is significantly less than either the incidental recharge from surface water irrigation or the annual discharge from springs.

Because of its unique geology of overlapping and fractured basalt layers, outcrops, and lava tubes, the ESPA easily accepts, transports and discharges water.

It is in large part due to these characteristics that recurring cycles of drought are reflected quickly by periodic declines in ground water levels and measured discharges in the TSR (and the upper basin) since 1901. This also is the reason that recurring "wet" cycles are reflected equally as quickly by increases in ground water levels and measured discharges to the Snake River. Figure 1 illustrates the correspondence between wet and dry climatic cycles (as measured by positive and negative values of the Palmer Drought Index) and increases and decreases in discharge from springs. In the upper portion of the basin, shown in **Figure 1a**, the discharge of Spring Creek appears to lag these climatic cycles by about 2 years. In the lower part of the basin, shown in **Figure 1b**, the discharge in the Thousand Springs reach appears to lag climatic cycles by 3-4 years.

A significant indicator of the ESPA's responsiveness and its resiliency is seen **Figure 2** which shows that during the twenty-one years between 1980 and 2002 when mass measurements were conducted, there was no significant change in ground water levels across the majority of the ESPA. In fact, there was a net decrease of just under 2 MAF in overall aquifer storage. This represents less than 1% of the water in storage in the upper portion of the aquifer. This despite repeated cycles of deep drought and sporadic wet years; despite significant changes in the water management regime that has reduced incidental recharge from surface water diversions by as much as 1 MAF annually; and despite the development of ground water for irrigation and other uses that continued until approximately 1992.

Nevertheless the effect of a relatively small decline in ground water elevation can have significant and potentially disproportionate effects on discharges from certain springs in the canyon of the TSR, particularly springs discharging from higher elevations in the aquifer. Aside

from potential localized "fixes," the way to achieve discharges from such springs at 1950s, 1960s or 1970s rates then, is to keep the aquifer essentially filled and overflowing, use the upper few feet of hydraulic head in the aquifer to drive the higher discharges and use the remaining 500 million to 1 billion acre-feet in the aquifer as the foundation or pedestal on which the upper layer of water driving the spring discharges will rest. This concept is illustrated in **Figure 3**.

Measured spring discharges in the TSR in 1901 were approximately 4,200 cfs. These discharges increased to approximately 6,800 cfs by 1953, due to the introduction into the ESPA of incidental recharge[6] from surface water irrigation that began in the early 1900s. By 1952 this incidental recharge was estimated to have increased the storage in the aquifer by 24 MAF, as shown on **Figure 3**. This recharge occurred due to annual irrigation diversions from the Snake River into a vast network of earthen canals, ditches and laterals, all of which leaked to some degree. Furrow irrigation techniques also allowed substantial amounts of water delivered to farm fields to percolate past the root zone and enter the aquifer. However, partly in response to the 1977 drought, both diversion and irrigation techniques had changed by the 1970's to more efficient methods, substantially reducing this incidental recharge. Canal companies and irrigation districts above Milner now divert an average of 0.5 MAF/year less during the summer irrigation season than they did before the drought of 1977.

As part of a program to maximize wintertime flows into newly-constructed Palisades Reservoir, in the 1960's irrigators in the Upper Snake agreed to cease their practice of diverting water throughout the non-irrigation season for domestic and stockwater purposes. These "winter water" savings alone reduced winter diversions out onto the ESPA by nearly 0.5 MAF.[7] Thus total annual surface water diversion out onto the ESPA have declined by nearly 1 MAF since the early 1960s.

There has been a declining trend in spring discharges in the TSR since the 1950s. Currently, TSR spring flows are approximately 5,200 cfs. However, as can be seen in **Figure 4**, this flow rate still is well above the historical measured discharge from the TSR and nearly twice the cumulative decreed diversion rate for rights dependent on ESPA spring flows in the TSR (exclusive of hydropower).

The primary factor influencing the downward trend has been the reduction of incidental recharge attributable to historical irrigation practices and winter water diversions. Ground water development also has played a part in this trend. **Figure 5** represents the relative effects of post 1962 ground water development and surface water conservation on observed discharges in the TSR. However, eliminating junior ground water diversions on the ESPA will not reverse the trend, particularly if incidental recharge continues to decrease. By way of example, **Figure 6** shows the change in the TSR spring discharge trend line that could be expected if there were no diversions under post-1962 ground water rights in Water District 130.

The TSR is dominated by an unusual geological feature that arguably is the largest factor in the current controversy between spring users and ground water pumpers: the area that lies above the elevation of the Snake River but below the canyon rim of the Snake Plain. The area contains some 5,500 acres of farmland and dozens of fish farms. These water users are situated *between* the aquifer and the river. They cannot divert by gravity from the river, but rather rely on

ground water emanating from the ESPA as spring flows—literally the outflow from the ESPA. While most areas in the West deal with conjunctive management by balancing the rights of ground water users with those of river diverters, and use river storage and natural flow rights if mitigation is required (this is much the situation in areas above Milner Dam), the TSR involves a "third type" of water user, spring users who cannot readily use water that might be available in the Snake River.

These extremely unique hydrologic circumstances in the TSR present unique and complicated physical and legal problems that the Interim Committee will need to consider and resolve in the coming nine months. One question that should be considered is whether either the laws of physics or the laws of Idaho can compel water molecules to discharge from a specific spring in a specific location across a high, broad canyon wall, and if so, how much will it cost to compel the first additional molecule to do so.

B. The water supply in the ESPA is complemented by a significant surface water supply.

The Upper Snake River Basin (above Milner Dam) also has approximately 5.7 MAF of surface reservoir storage, almost all of which is held under contracts for Idaho irrigators. On average, this storage system has approximately 2.0 MAF of carryover storage. In the severe dry cycle southern Idaho has experienced since 2000, average annual carryover in the Upper Snake River storage system has been only 0.6 MAF.

The Snake River discharges as much as 37 MAF of annual runoff to the Columbia River.[8] On an average annual basis approximately 2 MAF of Snake River surface water flows past Milner Dam.[9] By comparison, under the Colorado River Compact, the seven states of Colorado, Wyoming, Utah, Nevada, New Mexico, Arizona and California, with a combined population of 52 million[10] and millions of irrigated acres, apportioned the Colorado River based on an assumed average annual flow of approximately 16 MAF.

Combined, the ground and surface water supply potentially available to serve existing and future beneficial uses in southern Idaho is vast if these sources are managed and used as an integrated water supply. Aquifers represent large and resilient reservoirs for storing water needed to meet current uses by ground water pumpers and as a source of water for others during drought periods. Converting currently ground water-irrigated acres to surface water while retaining the ability to revert them to ground water when surface water is short, fits well with this integrated management approach.

IV. REVIEWING IDAHO WATER POLICY

IGWA believes that in the coming months the Interim Committee also should apprise itself of existing Idaho ground water management policies, evaluate (and as appropriate, re-evaluate) the applicability of those policies in the context of the current conjunctive management discussion.

A. Maximum Beneficial Use of Water.

A paramount State policy is to maximize the beneficial uses of water within the State of Idaho. This policy has its roots in the prior appropriation doctrine itself, Idaho common law and Idaho's State Water Plan. The Legislature also has enacted a statute expressly directing that this policy be followed.

From the start, the Idaho Supreme Court applied the maximum beneficial use requirement to all Idaho water users:

> In this arid country, where the largest duty and the greatest use must be had from every inch of water, in the interest of agriculture and home building, it will not do to say that a stream may be dammed so as to cause subirrigation of a few acres, at a loss of enough water to surface irrigate ten times as much by proper application.[11]

More recently, in a case reviewing SRBA Basin-Wide Issue No. 10, the Idaho Supreme Court forcefully reiterated the principle:

> The water of this arid state is an important resource. Not only farmers, but industry and residential users depend upon it. Because Idaho receives little annual precipitation, Idahoans must make the most efficient use of the limited resource. The policy of the law of the [s]tate is to secure the maximum use and benefit, and the least wasteful use, of its water resources.[12]

In Idaho, the right of appropriation and the priority of right that goes with it remain subject to the maxim:

> [T]he right of the first appropriator, exercised within reasonable limits, is respected and enforced. We say within reasonable limits, for this right to water, like the right by prior occupancy, is not unrestricted. It must be exercised with reference to the general condition of the country and the necessities of the people, and not so as to deprive a whole neighborhood or community of its use, and vest an absolute monopoly in a single individual.[13]

There is a tension between a policy that aims to maximize beneficial uses and one that seeks to secure "optimum" beneficial use.[14] Thus, the Idaho Supreme Court has recognized "the constitutionally enunciated policy of optimum development of water resources in the public interest."[15] The Idaho Water Resource Board policy as stated in the State Water Plan is to "[e]ncourage optimum economic development of the water resources, with due regard for prior water rights, that promotes the integration and coordination of the use of water, the augmentation of existing supplies and the protection of designated waterways."[16]

In the landmark Schodde case in 1912, the U.S. Supreme Court affirmed Idaho's maximum use policy when it held that a prior appropriator using a water wheel and the Snake River's current to appropriate water to irrigate several hundred acres could not block the construction of Milner Dam and its dependent appropriations, which would serve to irrigate over 300,000 acres.[17] Relying on the Schodde Case, and summarizing its holding, the Colorado Supreme Court has held that under the maximum use requirement, prior appropriators

> cannot reasonably 'command the whole' source of supply merely to facilitate the taking by them of the fraction of the entire flow to which their senior appropriation entitles them. On the other hand, plaintiffs cannot be required to improve their extraction facilities beyond their economic reach, upon a consideration of all the factors involved.[18]

B. Full Economic Development.

The Idaho legislature statutorily recognized the tension between priority of right, maximum or optimum use, and the relative water needs of an entire community when it enacted the Ground Water Act in 1951 and then amended it in 1953. Although as early as 1899, Idaho's Legislature provided that ground water was subject to appropriation to beneficial use,[19] it was not until 1931 that the Idaho Supreme Court ruled that ground water appropriations were subject to the priority doctrine.[20] Nevertheless, there is little if any indication that as a result the Legislature, the Department of Reclamation (later renamed Idaho Department of Water Resources) or surface water users considered ground water rights to be subject to administration in priority *with* surface water rights. The formal integration of ground water appropriations with surface water appropriations under a common administration scheme did not occur until the early 1950s.

In 1951, Idaho passed the Ground Water Act.[21] This Act validated existing ground water appropriations and established a comprehensive scheme for future ground water appropriation, administration and protection.

The 1951 Act began by declaring that "the traditional policy of the state of Idaho, requiring the water resources of this state to be devoted to beneficial use in reasonable amounts through appropriation, is affirmed with respect to the ground water resources of this state. . . ."[22] The 1951 Act also provided that unless specifically exempted by the statute (i.e., domestic wells), all administration of ground water rights whenever or however acquired, was to be governed by the provisions of the 1951 Act. The 1951 Act expressly made the transfer and forfeiture/abandonment provisions of the water code (I.C. § 42-222) applicable to ground water.

In 1953, after some experience had been obtained implementing the Ground Water Act, the Legislature enacted significant amendments that provided both a declared state policy of full economic development of ground water and a procedure to guide the integration, for the first time, of administration of ground water rights and surface water rights in a common priority appropriation system.

The first and foremost of these amendments was the addition of a declaration of state policy:

> *while the doctrine of "first in time is first in right" is recognized, a reasonable exercise of this right shall not block full economic development of underground water resources, but early appropriators of underground water shall be protected in the maintenance of reasonable ground water pumping levels as may be established by the state reclamation engineer as herein provided.*[23]

The Director was authorized under the 1953 amendments to prohibit or limit, by summary order, the withdrawal of water from the junior well if "water to fill any water right in the well is not there available." The legislation clarified that

> water in a well shall not be deemed available to fill a water right therein if withdrawal therefrom of the amount called for by such right would affect, *contrary to the declared policy of this act*, the present or future use of any prior *surface* or ground water right or result in withdrawing the ground water supply at a rate that exceeds a rate beyond the reasonably anticipated average rate of future natural recharge.[24]

The 1953 amendments to the Ground Water Act also established a procedure for objection, notice and hearing by which any senior surface or ground water user could seek to have a junior ground water right curtailed. Under this administrative hearing process a senior surface or ground water right holder may file a claim whenever he or she believes the senior right is being adversely affected by one or more junior priority ground water rights. Upon filing of such a claim, a "ground water board" is to be created to hold a hearing. This board is charged with determining the nature and existence of the respective water rights and determining

> whether the use of the junior right affects, *contrary to the declared policy of this act*, the use of the senior right. If the board finds that the use of any junior right or rights so affect the use of senior rights, it may order the holders of the junior right or rights to cease using their right during such period or periods as the board may determine and may provide such cessation shall be either in whole or in part or under such conditions for the repayment of water to senior right holders as the board may determine.[25]

Thus, the 1953 Legislature determined to integrate ground water administration with the existing surface water administration system. By then it also recognized that certain aquifer systems could be over-developed (hence creation of critical ground water areas with special restrictions on appropriations) and that ground water development would have effects, presumably adverse, on existing, prior surface water rights. But the 1953 Ground Water Act amendments provided that the typically senior priority surface water rights could not and would

not be asserted or administered contrary to the "declared policy of [the] act" which declared policy is the "full economic development of the underground water resources."

This is consistent with the current state policy governing conjunctive management of ground and surface water rights from interconnected sources. The State Water Plan provides that "the goal of conjunctive management is to protect the holders of prior water rights while allowing for the optimum development and use of the state's water resources."[26] The State Water Plan also recognizes that "it is important that all beneficial uses, including spring and surface water uses be considered in evaluating the full economic development potential of an aquifer."[27] The State Water Plan also includes the policy that "the hydrogeologic relationships between ground water supplies and spring flows continue to be quantified to allow for the determination of optimal development of the water resources."[28]

The questions for administrators, policymakers and lawmakers, then, is what is "full economic development of the underground water resources," and what if any efforts have been made to determine it in the ESPA or elsewhere? The State has made at least some deliberate evaluation of those questions when it entered into the Swan Falls Agreement with Idaho Power Company in 1985.

C. The Swan Falls Agreement.

In 1977, Idaho Power Company ("IPCO") filed a suit in the state District Court to have its water rights determined as against upstream junior appropriations, most of which involved direct diversions of surface water from the Snake River. Declining river flows, the increasing number of large direct diversions from the Snake River below Milner Dam using high-lift pumps, and the Idaho Public Utilities Commission's denial in September 1976 of a certificate of public convenience and necessity for IPCO's proposed coal-fired power station, motivated IPCO to take legal steps to assert and enforce the priority of its hydropower rights at Swan Falls Dam.

IPCO sought among other things, an order declaring that its Swan Falls water rights, with priorities ranging from 1901 to 1919, were not subordinated to upgradient junior water rights.[29] This suit was followed immediately by a blanket protest filed by IPCO with the Department against "all past and future water applications filed with the Department which contemplate diversion and consumptive use of waters from the surface and subterranean tributaries of the Snake river. . . between Milner Dam, the Snake River. . . east of Twin Falls and the Hells Canyon Dam. . . ."[30]

The State of Idaho opposed such a result, and waded into the litigation asserting, among other things, that IPCO was estopped from asserting its Swan Falls priorities against junior upstream development. Ultimately the parties reached a settlement that avoided costly, and for all sides, uncertain litigation. The settlement agreement was signed by the Governor and IPCO in October 1984. It included several key components. IPCO agreed to subordinate its Swan Falls rights to all then-existing upgradient appropriations *and to subordinate a portion of its Swan Falls rights above specified minimum flows to future upstream development, particularly future ground water development in the ESPA.* The Swan Falls Agreement provided for higher minimum flows in the Snake River of 3,900 cfs during the summer and 5,600 cfs during the

winter at the Murphy Gage immediately downstream of Swan Falls. Idaho Power's water rights were subordinated with respect to maintaining flows above these minimums.

The Swan Falls Agreement also established a "trust water area" within which ground water generally was presumed to be tributary to the Snake River below Milner Dam and a non-trust water area where ground water was presumed to be tributary to the Snake River above Milner Dam. The Swan Falls Agreement specifically contemplated additional, but staged, development of ground water in the trust water area by allowing for irrigation of up to 80,000 additional acres with new ground water diversions from the ESPA.

The settlement, the statutes, and the policies developed around the Swan Falls Agreement all were premised on the clear understanding that the agreed upon ground water development would reduce aquifer discharges to the TSR, and consequently, river flows at Swan Falls. As early as 1976, the Idaho Water Resource Board State Water Plan recognized:

> . . . Aquaculture is encouraged to continue to expand when and where water supplies are available and where such uses do not conflict with other public benefits. Future management and development of the Snake Plain aquifer may reduce the present flow of springs tributary to the Snake River. If that situation occurs, adequate water for aquaculture will be protected, however, aquaculture interests may need to construct different water diversion facilities than presently exist.[31]

Despite the State's policy to continue ground water development, one factor in the Swan Falls statutes had the potential to limit such development in the trust water area. This was a requirement that any ground water appropriation that would "significantly reduce" the water available to fill Idaho Power's Swan Falls water rights would undergo a public interest evaluation.[32] In 1988, however, the Department analyzed the effect on Swan Falls hydropower generation of developing the full 196,000 acres of additional land in the trust water area for which applications for ground water permits were then pending. The Department estimated that this development of new irrigation using ground water would, after sixty years of pumping, reduce flows at Swan Falls Dam by approximately 243 cfs. The Department concluded:

> Other factors present in a dynamic system as large as the Snake Plain aquifer will have more effect on the discharge of the Snake River than decreases caused by [196,000 acres] of new development . . . Approval of applications for permit or permits which propose the development of 196,000 acres of newly irrigated lands with water from the Snake Plain aquifer will not either individually or cumulatively cause significant reduction in the water supply available to [IPCO].[33]

Nevertheless, the Department actually processed only a fraction of the pending applications to appropriate trust water. Perhaps no more than 25,000 acres of new ground water irrigation development actually occurred before the Department imposed a moratorium on processing applications for new ground water rights other than for domestic, commercial,

municipal and industrial non-consumptive uses in 1992. That moratorium remains in place today.[34]

Some unresolved issues yet surround the interpretation and application of the Swan Falls Agreement. But that settlement, and the statutes and policies that developed around it indicate that in 1985, when faced squarely with the question of whether or how senior water rights, including spring and surface water uses, were to be considered in evaluating the full economic development potential of the ESPA, the state determined that it would permit a staged, continued development of ground water that would deplete spring discharges and river flows below Milner to meet minimum flows of 3,900 cfs in the summer and 5,600 cfs in the winter months at the Murphy Gage. The State Water Plan is consistent with this view in recognizing not only that spring discharges from the EPSA at times are the primary source of water available to meet these minimum flows but also stating that:

> [i]t is the policy of Idaho that the Swan Falls agreement between the state and Idaho Power Company establishes the framework for water management in the Snake River Basin.[35]

D. State Administration.

It is somewhat interesting but perplexing that at the same time that the State was "forthwith" issuing ground water permits and recognizing that ground water development would have, and was having, an effect on existing surface water rights, the state also was "forthwith" approving applications for large new appropriations from a declining base of spring flows in the TSR. This had two results that make the policy and management issues now facing the state and water users unusually complex. First, some of the more junior spring water rights were "proved up" for a greater quantity of water than actually was discharging from the springs, and thus have not seen the licensed quantity ever filled. Second, the priorities of ground water rights developed on the ESPA and spring rights developed in the TSR after about 1950 are, as shown on **Figure 7**, completely and inextricably interleaved.

It has been suggested by some that "mistakes were made" in managing the ESPA and in continuing to issue permits and licenses for ground water development after the early to mid-1950s when spring discharges in the TSR had begun to decline. It also has been suggested that the ESPA is fully- or over-appropriated, hence spring rights are going unfilled. IGWA believes the above facts about the quantity of water in storage in the aquifer, the quantity of annual recharge to the aquifer and the quantity of water removed from the aquifer suggest the opposite conclusion on both counts. Based on a 1996 USGS report, the total annual withdrawal from the aquifer in 1980 by ground water pumping was approximately 1.1 MAF and the average annual rate of recharge was approximately 8 MAF. Annual discharge to the river from the aquifer (mainly from springs) is approximately 7 MAF. In other words, annual ground water use accounts for less than one half of one percent of all the water in storage in the ESPA, less than 15% of the total annual rate of recharge and less than 14% of all aquifer discharges.

Further, rather than mistake or inadvertence, the permitting and development of ground water in the ESPA and elsewhere in Idaho appears to have proceeded as a conscious, deliberate action by the State to implement a strongly enunciated state policy, institutionalized in statutes

and the State Water Plan, to pursue the full economic development of ground water resources. When directly confronted with the issue of declining spring flows and the effects on senior water rights in the Swan Falls dispute in 1985, this policy was considered again, and applied through a similar conscious decision to continue to develop ESPA ground water. That conclusion and that result have become "the framework for water management in the Snake River Basin."[36]

One might also suggest that mistakes were made in continuing to issue permits for large quantities of spring water, through the 1960s and 1970s based on a declining resource, or that the springs are themselves over-appropriated. But a comparison of the cumulative licensed/decreed diversion rate for spring rights (exclusive of hydropower) in the TSR with the historical annual spring discharge in the TSR, shown on **Figure 4,** indicates that spring discharges still are nearly twice as great as accumulated spring diversion rates.

V. SETTING MANAGEMENT GOALS

IGWA suggests that the Interim Committee should consider how and to what extent the policies of maximum beneficial use and full economic development will guide water management in the ESPA and in other water systems in the State.

IGWA suggests that the Interim Committee consider whether the following premises, management goals and considerations are valid or appropriate.

- ***The State should define an Optimum Use management scheme that optimizes use of a combined ground water and surface water resource, which in the ESPA/upper Snake River Basin exceeds 1 billion acre-feet.***

- ***Optimum Use Management employs strategies to "normalize" the effects of dry and wet climatic cycles on meeting beneficial uses by reducing the amplitude of variations in annual water availability to vested water rights.***

- ***Optimum Use Management maximizes the range of existing and future beneficial uses that can be supported by the available supply.***

- ***Optimum Use Management maximizes the use of natural flow and surface water storage to support existing beneficial uses (particularly irrigation, which has incidental recharge benefits) and for large-scale aquifer recharge in wet cycles, and looks to the aquifer "reservoir" to the extent necessary to support existing beneficial uses during dry cycles.***

- ***Optimum Use Management employs the most cost-effective strategies to support existing beneficial uses.***

- ***Optimum Use Management also should provide flexibility to adapt management measures to the hydrologic situation, which varies from basin to basin, year to year.***

- ***Optimum Use Management should provide flexibility to adapt management measures to currently unforeseeable structural changes in water uses and needs.***

- ***Improving existing water distribution systems and providing exchanged or substituted water supplies is more cost effective than aquifer recharge or curtailment to support existing beneficial uses.***

- ***Certain institutional constraints exist that will need to be reviewed and addressed one way or another in any optimum management scenario. These include, but are not limited to***

  - ***Federal ownership of a significant portion of the water management infrastructure, storage reservoirs and distribution systems;***

  - ***Federal "ownership" of storage water rights;***

  - ***Federal actions in furtherance of optimum management may require lengthy, expensive and uncertain NEPA and ESA compliance***

  - ***Statutory "unsubordination" of hydropower water rights to aquifer recharge water rights via Idaho Code § 42-234(2).***

- ***If large-scale aquifer recharge is to be a significant component of conjunctive administration, then administrative and/or bureaucratic procedures or compliance requirements will need to be streamlined.***

- ***If surface water is to be used for aquifer recharge or mitigation, or conjunctive use, a more reliable and equitable water market for spaceholders and non-spaceholders should be developed.***

- ***Problem Definition - The way we define problems often limits the way we think about solving them. There are no magic bullet answers to complex water management problems. A comprehensive solution will involve many measures implemented in different locations over different time scales.***

[1] This Preliminary Mitigation Plan can be reviewed at IDWR's website at: http://www.idwr.state.id.us/about/MitigationPlan/NorthSnake%20MitigationNotice&Plan.pdf.

[2] In 1991, the Idaho Groundwater Quality Council estimated that ninety percent of Idaho's drinking water comes from ground water sources. Idaho Ground Water Quality Plan, Protecting Ground Water Quality in Idaho, Idaho Ground Water Quality Council (1991).

[3] U.S. Dept. of Energy, Geohydrologic Story of the Eastern Snake River Plain and the Idaho National Engineering Laboratory 2 (D.C. 1982).

[4] Comprehensive State Water Plan, ESPA at 28.

[5] Lindholm, Gerald F., Summary of the Snake River Plain Regional Aquifer-system analysis in Idaho and Eastern Oregon. U.S. Geological Survey professional paper 1408-A. 1996.

[6] Comprehensive State Water Plan, ESPA at 30.

[7] IDWR records of historical diversions.

[8] The average annual runoff for the Snake River Main Stem measured near Anatone, WA for the years 1958 through 2003 was approximately 25.7 MAF. USGS Water Resources Data, Idaho. Water Year 2002 (Vol. 2). Water Data report ID-02-2.

[9] Annual runoff has averaged 2,015,000 acre-feet at Station 13088000 Snake River at Milner, ID (Combination Snake River at Milner Gaging Station and Lower Milner Power Plant at Milner) for water years 1927 – 2003. In 2002, however, annual runoff at this Station was only 243,800 acre-feet. USGS Water Resources Data, Idaho. Water Year 2002 (Vol. 1). Water Data report ID-02-2.

[10] 2002 U.S. Census.

[11] *Van Camp v. Emery*, 13 Idaho 202, 208, 89 P. 752, 754 (1907).

[12] *State v. Hagerman Water Right Owners ("Partial Forfeiture Decision")*, 130 Idaho 727, 735, (1997), quoting, *Kuntz v. Utah Power & Light Co.*, 117 Idaho 901, 904 (1990).

[13] *Basey v. Gallagher*, 20 Wall. 670 (1875).

[14] The Colorado Supreme Court has noted that "the policy of maximum utilization does not require a single-minded endeavor to squeeze every drop of water from the valley's aquifers. . . . [T]he objective of 'maximum use' administration is 'optimum use.' Optimum use can only be achieved with proper regard for all significant factors, including environmental and economic concerns." *Alamosa-La Jara Water Users Protection Ass'n v. Gould*, 674 P.2d 914 (Colo. 1984).

[15] *Baker v. Ore-Ida Foods, Inc.*, 95 Idaho 575, 513 P.2d 627 (1973).

[16] State Water Plan, Idaho Water Resource Board (1996) at 4.

[17] *Schodde v. Twin Falls Water Co.*, 224 U.S. 107 (1912).

[18] *City of Colorado Springs v. Bender*, 148 Colo. 458, 366 P.2d 627 (1973).

[19] 1899 Sess. Laws 380 (codified at Idaho Code 42-103).

[20] *Silkey v. Tiegs*, 51 Idaho 344, 5. P.2d 1049 (1931).

[21] 1951 Sess. Laws 423.

[22] 1951 Idaho Sess. Laws 423 (codified at Idaho Code § 42—226).

[23] 1953 Idaho Sess. Laws 277.

[24] 1953 Idaho Sess. Laws 277, 285 (codified at.Idaho Code § 42-237a(g)) (emphasis added).

[25] 1953 Idaho Sess. Laws 277, 287 (codified at Idaho Code § 42-237c) (emphasis added).

[26] State Water Plan, Idaho Water Resource Board (1996) at 6.

[27] State Water Plan, Idaho Water Resource Board (1996) at 6.

[28] State Water Plan, Idaho Water Resource Board (1996) at 7.

[29] Amended Complaint, *Idaho Power Co. v. State of Idaho*, No. 62237, in and for the County of Ada (filed Nov. 8, 1977).

[30] *In the Matter of Applications Filed for Water Diversions for Consumptive Use on the Surface and Subterranean Tributaries of the Snake River Between Milner Dam and Hells Canyon* (Dec. 30, 1977).

[31] 1976 State Water Plan—Part Two at 118.

[32] Idaho Code § 42-203C(1).

[33] Idaho Department of Water Resources, In Re: Evaluating Whether Development of New Irrigated Acreage Will Cause a Significant Reduction in Trust Water Available for Power Production, Memorandum Decision and Order at 4 (undated).

[34] In the Matter of Applications for Permit for Diversion and Use of Surface and Ground Water in the Snake River Basin Upstream from the USGS Gage on the Snake River Near Weiser, Moratorium Order (May 15, 1992).

[35] State Water Plan, Idaho Water Resource Board (1996) at 17.

[36] State Water Plan, Idaho Water Resource Board (1996) at 17.

Figure 1a - Spring Creek Flow vs Palmer Drought Severity Index

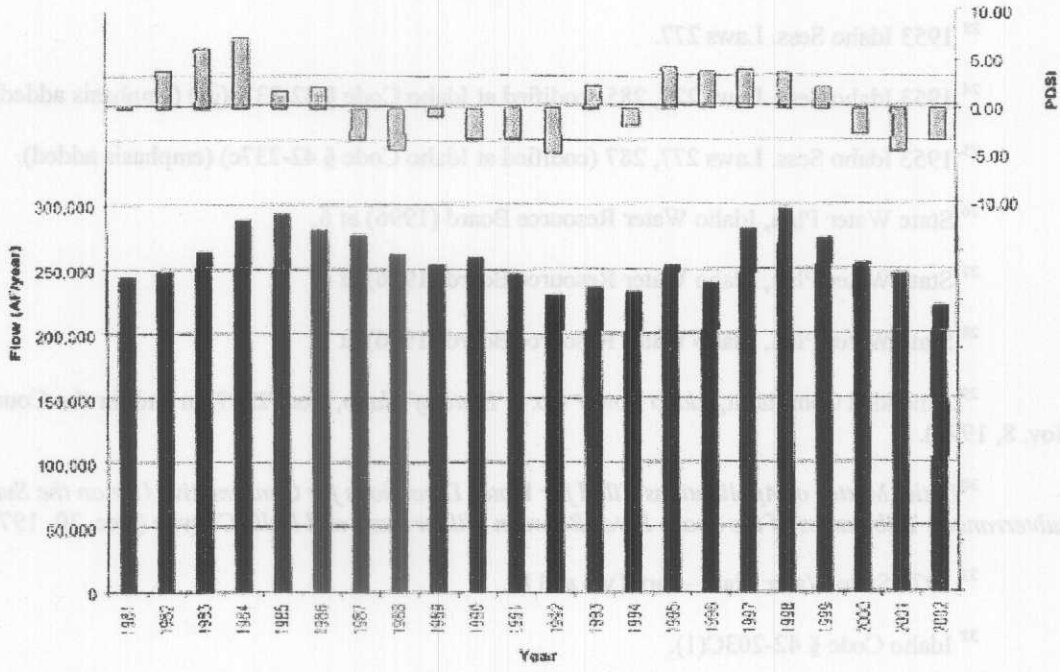
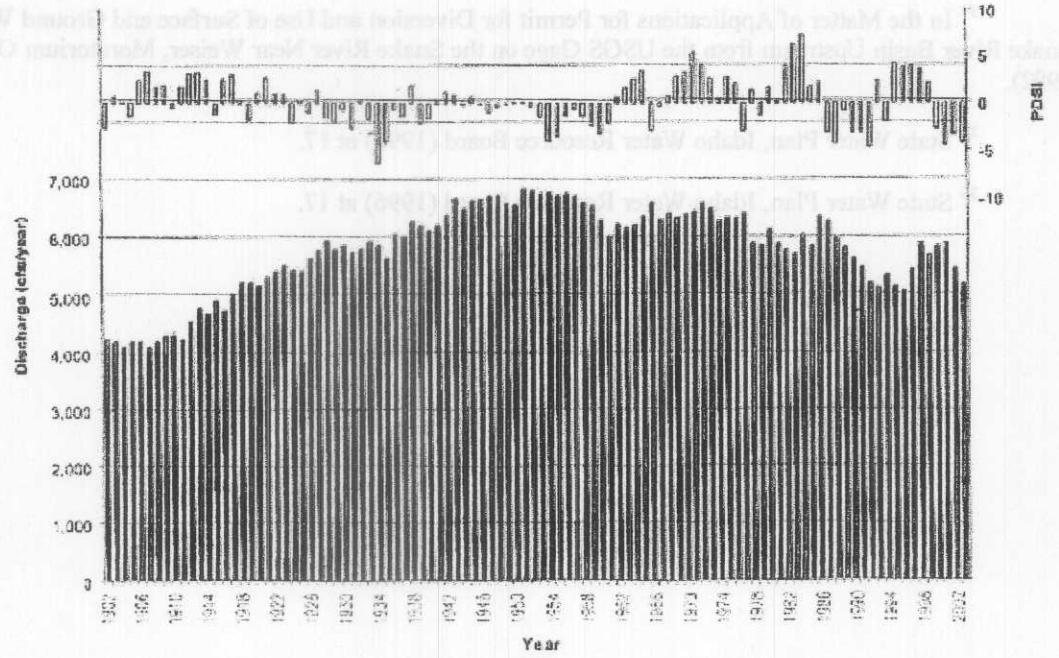


Figure 1b - Aquifer Discharge to Thousand Springs Reach vs Palmer Drought Severity Index



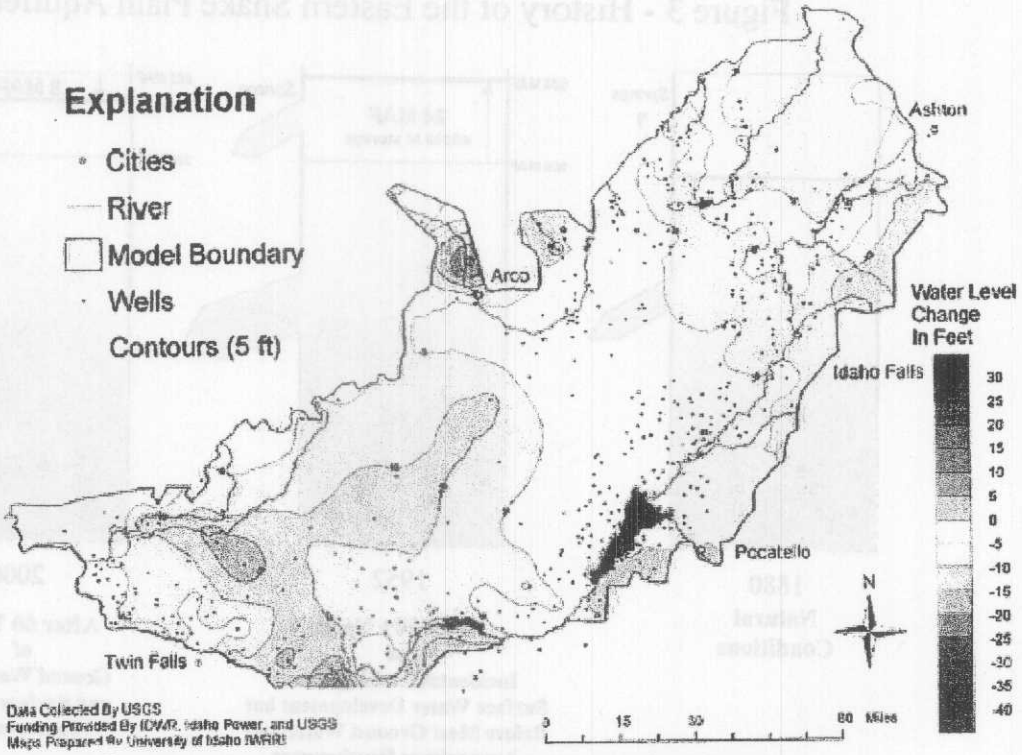
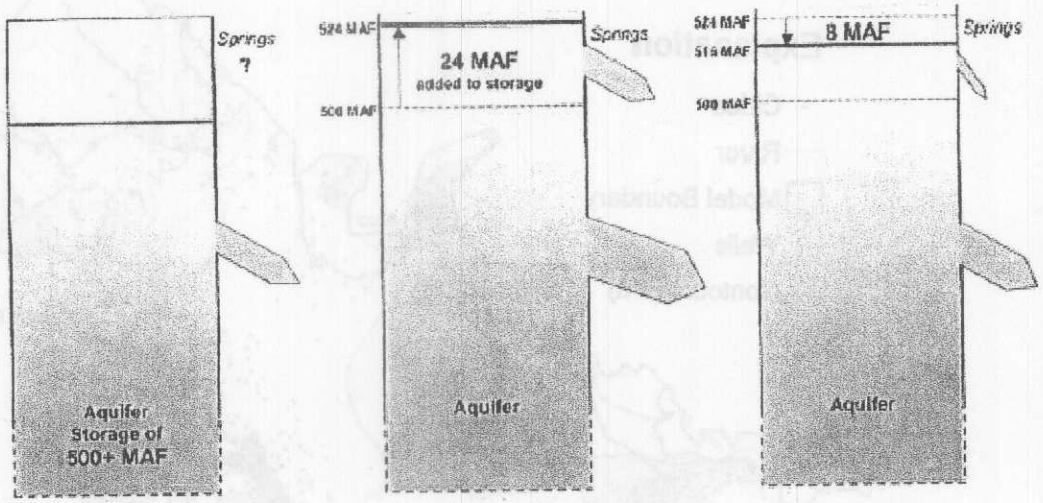


Figure 2 - Spring 1980 to spring 2002 water level change map.

Figure 3 - History of the Eastern Snake Plain Aquifer



1880
Natural Conditions

1952
After 70+ Years of Incidental Recharge from Surface Water Development but Before Most Ground Water and Aquaculture Development

2000
After 50 Years of Ground Water Use and Surface Water Conservation

Figure 4 - Average Annual Spring Discharge and Accumulated Spring Water Rights
Snake River Between Milner and King Hill

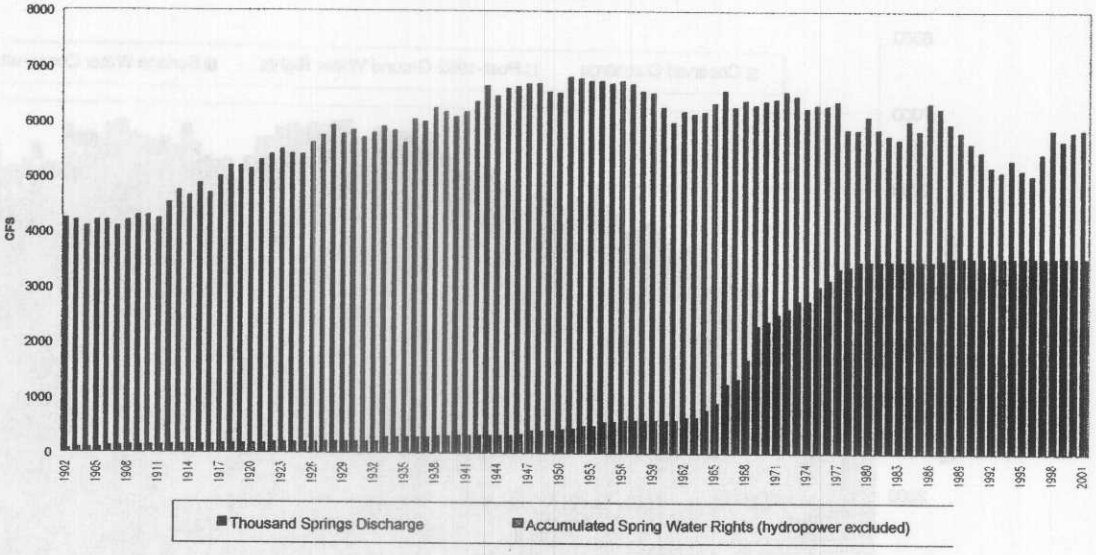


Figure 5 - Annual Aquifer Discharge to Thousand Springs Reach (TSR)
Showing Effects of Post-1962 Ground Water Rights and Surface Water Conservation

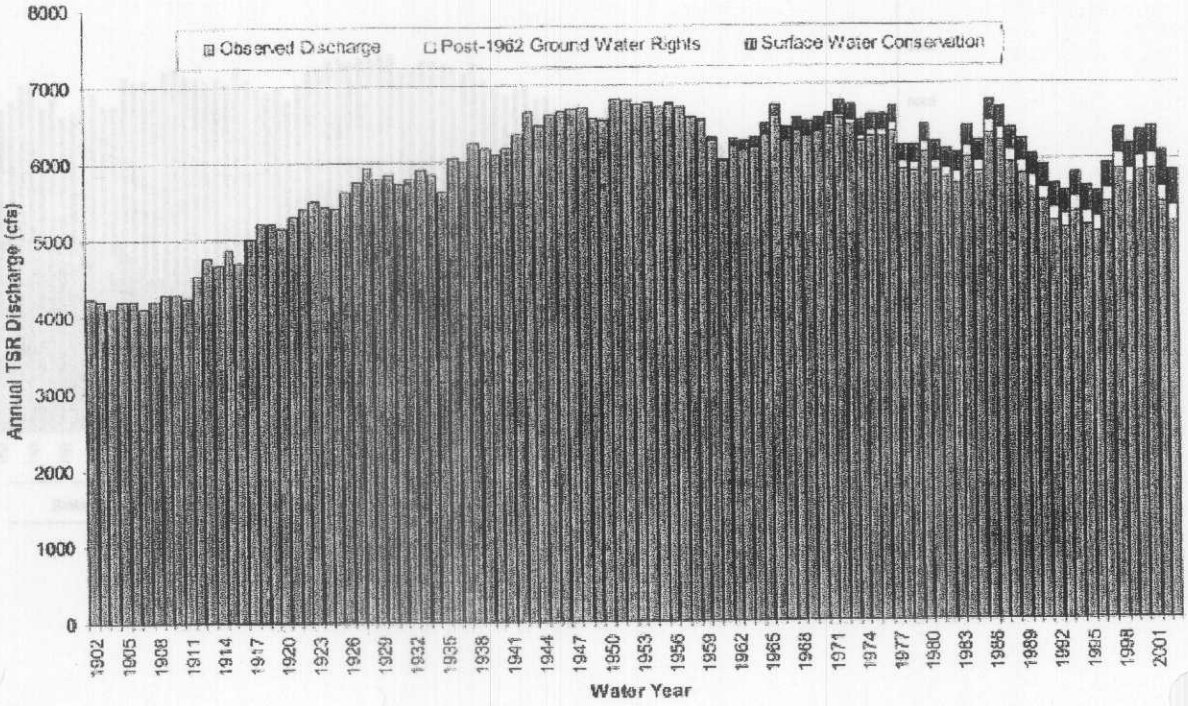


Figure 6 - Marginal Effect of Ground Water Pumping on Declining Spring Flows

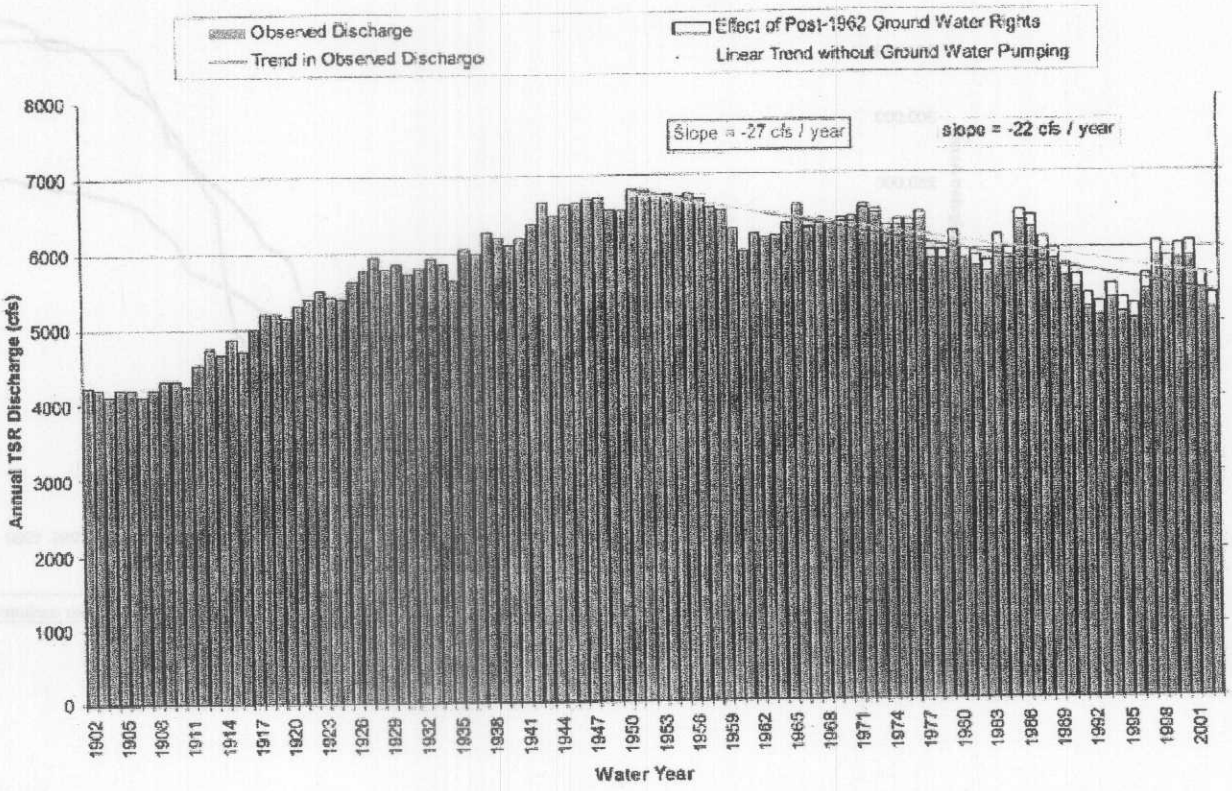


Figure 7 - Ground Water Irrigated Acreage (Districts 120 and 130) and TSR Spring Water Rights, by Priority